

MAYORS CHALLENGE

BREST WIN3

city of Brest, FR

François Cuillandre, Mayor

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Vision

1. What is the problem you are taking on?

How to facilitate and actively stimulate public engagement in, and commitment to, the transformation process to more efficient energy consumption

2. Why did your city choose this problem? Describe the problem's breadth and depth and its significance to your city, and include specific data points as appropriate.

As stated in our climate plan, following the objectives of the Kyoto Protocol, Brest aims to reduce greenhouse emissions by 523 000 tons of CO₂ as quickly as possible.

To reach these objectives, the human factor is crucial and everyone needs to make an effort in their own homes.

CO₂ levels for the housing sector are fixed at 162 000 tons, which are divided into:

- "Renovation" component (65 000 tons), takes a long time to implement and the Return On Investment takes even longer (15 years).
- "Users' practice" component (97 000 tons) is faster to implement and the ROI is quicker (3 years).

This project will provide the city with a toolbox to help achieve the goal through the "users' practice" component.

3. All "new" ideas stand on the shoulders of ideas that came before. Tell us what you know about prior efforts (programs, research, initiatives) to address this problem. What actions, if any, has your city taken on this issue? What about other cities? Tell us what elements you'll reuse and what you'll improve.

Most cities including Brest have already set up programs to raise citizens' awareness, educating them and encouraging their involvement so as to get them to change their current practices.

Various actions have been carried out, for example, schemes for reducing specific electric consumption, participating in distributed load shedding, monitoring energy consumption...

However, because of insufficient public engagement, these actions have not been very successful.

Brest Win3 Project will provide the local energy agency with a tool to help solve this problem more efficiently.

First of all, the "smartness" component will be integrated into the system and the citizens will become the main stakeholders.

Citizens who adopt a smart way of optimizing energy consumption will be rewarded. The City Hall of Brest has recently established a partnership with a local company called 450, which invented the product called « Compte épargne CO₂® » (CO₂ Savings Account) with a comprehensive rewarding system.

The city of Brest will work with 450 to adapt their business model so that it is compatible with and

can be integrated into the Brest Win3 Project. We will recruit as many citizens as possible in this project via the rewarding system.

4. Tell us the first sentence you'd like to read in an article about the launch of your project in the local paper.

Reduce your energy bill and earn money, it's possible: I'm in charge!

5. Describe your idea and how it actually works on the ground.

The city of Brest would like its citizens to reduce their domestic energy consumption.

Citizens will be encouraged to:

- Adopt new behavior and attitudes
- Participate in distributed load shedding during peak consumption hours
- Produce and use renewable energy at home (solar power)
- Use electric vehicles: personal or shared public electric cars

There are two particularly innovative components in this system:

- the Smart Component

Once citizens better understand their consumption parameters, they will work side by side with city services, and co-create their own dashboard which they can view and follow on computers or smartphones.

- the Reward Component

Citizens will receive vouchers that they will be able to use within a broad network of vendors.

All electric current is measured in kWh. Data is acquired in the home or at changing stations for electric vehicles and is loaded onto collective terminals.

The City Box, installed in homes, receives:

- consumption data from individual appliances, from a network of sensors that already exists or will be installed
- renewable energy and home consumption data
- the orders of distributed load shedding given by load management operators

Remote charging stations identify the motorist and record kWh consumption.

Data are transmitted to the City Server that converts kWh into Kg of non-emitted CO₂; results are then sent to a specific operator, who credits the motorist's CO₂ savings account.

Citizens can use their Smartphone for checking their credit and for purchasing items.

6. Explain specifically what elements are new and innovative about your idea.

The innovative features are the creation of a complete, integrated and free-flowing system:

- Individual dashboards co-created with the residents to help them understand and manage their energy consumption
- A rewarding system based on Kgs of non-emitted CO₂ converted from kWh saved by eco-friendly behavior, voluntary participation in distributed load shedding, production and self-consumption of self-renewable energy, and use of electric vehicles.
- A user-friendly and free-flowing secured system, combining existing systems

7. Is your solution primarily (a) solving an issue-specific problem, or (b) improving the way city government does its work? (choose one only)

The way government works: Increase public engagement

Impact

8. Describe the citizens or stakeholders who this idea will impact most. How will your idea improve their life, the way they work, and/or their experience with the city?

This project will impact mainly the residents who find that their energy bills are too expensive and those who do not wish or cannot invest in energy renovation for their housing (tenants, mobile persons or those with low incomes).

This project will help participants understand their energy bill better. They will be able to measure the impact of their energy behavior and as a result, their purchasing power will be increased because they will pay less for their energy bill and earn e-coupons.

Their home practices will influence the professional sphere.

Their individual involvement will result in collective change.

9. Talk to some actual citizens and/or stakeholders from other areas of government about your idea. What are three of the most interesting responses (please enter one interesting response per box)? What stands out as exciting and/or most impactful to people?

INTERESTING RESPONSE 1

Price reductions sound interesting for my daily expenses, such as reduced-fare tickets for public transport or food shopping.

INTERESTING RESPONSE 2

Once we know the right things to do, it all just depends on whether we will be motivated enough to continue. And incentives like having shopping vouchers would motivate me.

INTERESTING RESPONSE 3

It's difficult to stop bad habits. People care about their wallets but the program shouldn't be too restrictive or too stressful

10. What two to four key metrics will you track throughout this project, starting now and continuing through and beyond launch? How will you collect this information?

The four Indicators are as follows:

- The number of participants in this project
- The amount of KWH saved
- The amount of non-emitted CO₂
- The amount of e-coupons used.

The results will be collected via the database queries in the information system.

Implement

11. Provide the name and title of the city employee who will serve as project lead. Describe their position within your city's government.

Vincent Le Jeune, Director of the 'Engineering-Expertise' Department, reporting directly to the General Manager of Brest City Hall. He works closely with elected officials and the Operational Department.

12. List the team that will implement this idea within your city government. What value does each member bring?

Alain Masson, First Deputy Mayor in charge of Sustainable Development, will be the project head : he will draft the project guidelines, with the support of the Project Manager.

He will lead a Steering Committee :

- The Local Energy Agency (**ALE**) - energy consultants and an "internal customer " of the project
- A panel of energy consumers
- Representatives from the economic environment
- General Manager
- Financial Manager
- Project Manager

The project manager will head a team composed of :

- The Foresight and Urban Strategy Mission in charge of citizen mobilization and the Climate Plan
- The Department of Urban Ecology in charge of the energy strategy
- The Department of Information Systems, in charge of the design and deployment of computer system.
- The Department of Communication in charge of promoting the service, in coordination with the ALE

Each department will ensure the relationship with external contractors.

13. Who are all the people that need to say yes in order to bring your idea to life?

The City Council will draft and validate the guidelines of the Project. The guidelines will be drafted by the First Deputy Mayor, who is Director of Sustainable Development.

All the external partners (Schneider, 450, MEITO, ARKEA, South Brittany University) have already confirmed their commitment to the project.

14. Thinking about the phases from idea to implementation, what parts of your idea might you prototype? What early opportunities do you see for testing aspects of your strategy that can help inform your overall idea?

Our prototype :

- Adaptation of Company 450 model to each city's needs: adapting and defining the reward component (amount, frequency of crediting the account ...)
- The man-machine interface – using the smartphone to check performance, consult individual CO2 accounts, pay at sales points, access the city social network ...
- The links between the IT organizations, internal and external (450, Schneider, sensors for energy flow, banking system...)
- Economic model to verify each actor's interest in the system, especially for citizens.

The Center for Research in Psychology, Cognition and Communication at South Brittany University will be a close partner

15. Describe your implementation plan and its key phases. Specifically note when you will (a) begin implementation (assuming you receive a prize in fall 2014), (b) fully launch, (c) record your first measurable outcome or impact, and (d) achieve full scale.

2014 :

- Establishment of project guidelines
- Creation of Steering Committee and the Project Group

2015 :

- Involvement of citizens and the stakeholders of the project (local authorities, local companies)
- Finalization of overall prototype
- Strengthening the links between the company 450 and the commercial outlets (sales points of e-coupons)

2016 :

- Test carried out with a sample of 300 families
- First system assessment results
- Public campaign for the project

2017

- Apply to first batch of 5000 families

16. How will you engage organizations, talent, and/or resources outside of the municipal government both in developing your solution, as well as during implementation? Who would you like to engage and how would they add value to your project?

Some organizations have confirmed their interest.

The company 450 is testing a pilot project of CO2 Savings Accounts in Brittany in partnership with Brest, approved by the European Carbon Market Authority.

The Center for Research in Psychology, Cognition and Communication will be our close partner.

MEITO will help us choose the regional expertise providers.

Schneider Electric will provide its industrial capacity of deployment and adaptability of its Box for multiple applications.

ARKEA, a major banking group, will provide financing solutions and electronic payment tools.

The cities of Quimper and Lorient will work with Brest.

17. At this stage, what is your best estimate of the cost to both implement and sustain your idea? Provide two costs with a brief explanation: one for all the work that will lead up to launch, and another for the project's year-to-year cost.

Leading up to launch
€ 3 950 000

Prototyping : 300 000 €

Computer hardware and software : 1 000 000 €

Boxes (5 000 families x 500€) : 2 500 000 €

Communication : 150 000 €

Year-to-year
€ 820 000

- Boxes (1 500 families per year over 10 years : 1 500 x 500€) : 750 000 €
- Computer maintenance : 50 000 €
- Communication : 20 000 €

18. What are the three largest risk factors that could derail your idea and why? What is your plan to mitigate those risks?

Largest risks:

1. No support from the population: difficulties in understanding; the system fails to meet the demand of rewarding
2. Financial Failure of Company 450, the back-office of the reward system
3. No support from economic operators who refuse payment in Kg of CO₂

Mitigation actions :

1. Public engagement in the project as early as possible, via the representative bodies of citizens in Brest and the Steering Committee, prototyping (behavior, ergonomics, economics) , communication, monitoring the activity (acquisition of Kg of CO₂ and numbers of e-coupons used in the network)
2. Economic prototyping, support of the development of vendors' network, followed by city activity and the economic status of 450, reaching an agreement on data recovery and redundancy, etc ...
3. Operator participation early in the project : operators will lobby at the highest levels of local government, participate in the Steering Committee, support 450 by developing vendors' network and monitor the activity.

An essential measure for minimizing these risks is also to have a clearly identified leader in the city government who is capable of managing, monitoring, communication and adjusting activities

during and after the launch of the project.

Transferability

19. How universal is the problem you're addressing? Make your best effort to quantify the effects of this problem locally, nationally, and globally.

The objective of the project is to quickly install a tool to help reduce CO2 emissions.

It is a planetary problem.

Emissions reduction per household is estimated at 0.7 ton per year, representing in total 18 000 tons for the city. Extrapolated, this means 15.4 million tons for France, and 349 million tons for EU

20. Share your idea with city employees from three different cities (feel free to reach out to any city that might benefit from it—not just ones that are eligible to apply for the Mayors Challenge). How do they respond? Describe the need they see and any challenges they anticipate.

CITY 1

"This is great, it makes life easier for volunteer citizens through automaticity. This device brings strength to company 450's project."
Quimper-Jocelyne Hiver

CITY 2

"Interesting, e-coupons should allow daily consumption purchases. It's an add-on appeal. Monitoring in detail by item, fostering - I know better, I behave better-."
Lorient-Isabelle Malot

CITY 3

"Kind of interesting, we have ourselves an open data experimental monitoring project to draw a comparison between individuals themselves, we didn't consider a reward system."
Rennes : Brendan Catherine

21. Make the case for why your idea, if successful, will be able to spread to other cities.

The problem is universal. The solution can be applied across the board. Behavior change requires a lower capital investment than renovation.

Reward is part of everyday life and can be a force for promoting behavior modification. Reduction of public budgets exists everywhere. Reward funding will not come from government budgets but from the discounts given by the vendors, who will benefit by an increase in sales.

Technical prototyping ensures deployment of the solution in a heterogeneous environment, ensuring free flow, security, confidentiality, inter-operability and ability to communicate with external operators, while preserving existing components and ensuring the robustness of solutions.

Summary

Imagine you are presenting your idea to the Mayors Challenge selection committee. How would you summarize your idea in a way that gets people excited for its implementation? Make sure you clearly articulate the problem, the solution, and how your idea will change your city for the better.

Shifting the current citizen climate/energy/environmental position from “*There is nothing I can do, this is not my problem but the government’s.*” into “*Hey, I made a lot of money and had a lot of fun in cutting down my CO2 emissions.*” is our great challenge.

For the past 40 years, in order to limit energy consumption and CO2 emissions, governments have tested at high cost all the economic tools available: taxes, subsidies, incentives, regulations, information...

As for the city of Brest, we will first invest in the « smartness » of our citizens, motivating them to be the main stakeholders in this energy-saving project.

Then we will test the effectiveness of CO2 savings accounts (a climate nudge): an innovative behavioral economics instrument. Our challenge is to empower the public and make the reward part of their lives.

We will be the first city in France, and probably the first in the EU, to implement this idea.

In Brest Win3 there will be three winners :

- the citizens will make money by reducing their energy consumption in a fun way earning e-coupons to increase their purchasing power.
- the partners : local commerce and companies will benefit by expanding their network, and the University will be closely associated
- **THE PLANET**

A great idea needs a great name. What are you calling your initiative?

BREST WIN3